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entered in my memorandum-book on September 16. It is my habit to note the magnitudes of the new planets at least once during every night's work, and sometimes, when I am not satisfied, twice or thrice. On August 20th I remarked that the magnitude should not be rated higher than the 10 or 10·9 at the highest. On August 29 many observations were made, and I find written opposite the planet, 'difficult to recognise,' 'very faint,' and again, 'planet fading very fast.' On September 1 the planet was noted as 'not larger than 11 mag. I perceive that from night to night it grows fainter.' I only observed *Iris* once on October 3, when its magnitude was noted four times independently, and each time set down as the 9th."

IRIS.

Observations.

HAMBURG. (MM. C. and G. Rümker.)

1847.	Hamburg M. T. h m s	R. A. ° ′ ″	N.P.D. ° ′ ″	
Oct. 10	6 42 3	299 13 32·7		Transit G. R.
11	39 1	299 27 3·0		——
15	27 8	300 24 51·0		——
16	6 24 13	300 40 19·5		——
25	5 59 4	303 14 23·1		——
26	56 23	303 32 58·6		——
Nov. 17	5 1 50·3	311 33 35·6	102 25 25·3	Mer. Circ. C. R.
18	4 59 32·3	311 58 8·0	102 20 13·2	——
28	6 46 54·0	316 16 4·5	101 20 57·6	Equatoreal.
Dec. 1	7 40 37·6	317 37 23·8	101 0 40·5	——
4	6 17 52·2	318 57 25·1	100 40 3·8	——
8	7 34 16·2	320 49 49·5	100 10 10·3	——
12	6 43 15·8	322 42 0·8	99 38 51·4	——

Elements. By Mr. Graham, of the Observatory, Markree.

Epoch 1848, Jan. 1·0, Greenwich Mean Time.

	° ′ ″	
Mean Anomaly.........	330 20 16·70	
π	42 2 1·49	Mean Eq. Jan. 1, 1848.
☊	259 53 3·11	
i.........................	5 28 22·96	
ϕ	13 10 24·39	

μ ...... 970″·6583 Log a ...... 0·3752935

These represent accurately in latitude, and within 0″·2 in longitude, the middle place of the observations from which they are deduced; viz.

1847.	G.M.T.	R.A. h m s	N.P.D. ° ′ ″	
Aug.	13·423819	19 57 29·44	103 27 28·5	South Villa.
Oct.	15·397950	20 1 48·97	104 13 16·7	Markree.
Dec.	18·290046	21 42 24·68	98 47 42·5	Markree.

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I subjoin the equatoreal co-ordinates:

$$
\begin{aligned}
M &= 131^{\circ}\,13'\,47''{\cdot}17 + 0''{\cdot}1376\,t + 1{\cdot}001\,E \\
N &= 40\;\;30\;\;53{\cdot}87 + 0{\cdot}1361\,t + 0{\cdot}991\,E - 0{\cdot}11\,d\omega \\
P &= 55\;\;28\;\;54{\cdot}94 + 0{\cdot}1335\,t + 0{\cdot}976\,E - 0{\cdot}60\,d\omega
\end{aligned}
$$

$$
\begin{aligned}
\operatorname{Log} m &= 0{\cdot}3682635 - 0{\cdot}081\,t - 0{\cdot}59\,E \\
\operatorname{Log} n &= 0{\cdot}3344921 - 0{\cdot}047\,t - 0{\cdot}26\,E - 8{\cdot}7\,d\omega \\
\operatorname{Log} p &= 9{\cdot}9650937 + 0{\cdot}777\,t + 5{\cdot}22\,E + 47{\cdot}6\,d\omega
\end{aligned}
$$

$$
\begin{aligned}
\mu &= -\,0{\cdot}4001906 + 2{\cdot}414\,t + 17{\cdot}57\,E \\
\nu &= -\,0{\cdot}3198253 - 2{\cdot}435\,t - 17{\cdot}80\,E + 8{\cdot}4\,d\omega \\
\pi &= -\,0{\cdot}1732753 - 1{\cdot}081\,t - 7{\cdot}72\,E - 15{\cdot}5\,d\omega
\end{aligned}
$$

The co-ordinates referred to the true equinox are,

$$
\begin{aligned}
x &= m \sin(M + \xi) + \mu \\
y &= n \sin(N + \xi) + \nu \\
z &= p \sin(P + \xi) + \pi
\end{aligned}
$$

where t denotes the days from the epoch, 1848, Jan. 1·0

E	the Equation of the Equinoxes in Longitude.
$d\omega$	the Obliquity $-\ 23^{\circ}27'23''$
ξ	the Excentric Anomaly.

The variations of log *m*, &c. are to be applied as if all the figures in log *m*, &c. were *integral* numbers.

SATELLITES OF SATURN.

Observations of Mimas, *the closest and most interior Satellite of Saturn.* By Mr. Lassell.

" It is to be regretted that, owing to the discovery of the closest two satellites of *Saturn* having been made at a period long after the five others became known, it is difficult, in referring to the individuals, to quote them by numerals which shall, explicitly and without ambiguity, point out which satellites are meant.

" Sir John Herschel, seeing this difficulty, has invented and published in his Cape Observations a nomenclature which completely removes it, and moreover will retain its precision should any more satellites hereafter be discovered. He gives a proper name to each of them, and, beginning with that nearest to *Saturn*, designates them thus : *Mimas*, *Enceladus*, *Tethys*, *Dione* *Rhea*, *Titan*, and *Japetus*. I cannot but think this nomenclature a great improvement, and worthy of general adoption.

" Of *Mimas*, the satellite I now refer to, I have obtained, in all, five observations:—

" 1846, Aug. 25. About 11½ p.m. M.T. the satellite appeared at its greatest elongation westward. Aug. 30. The satellite ap-

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